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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,003	07/22/2002	Peter Nawrath	19943604	6428

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EXAMINER	
FONTAINE, MONICA A	

ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

Office Action Summary	Application No.	Applicant(s)	
	10/088,003	NAWRATH, PETER	
	Examiner	Art Unit	
	Monica A Fontaine	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-20,22-28,33 and 34* is/are rejected.

7)☒ Claim(s) *21 and 29-32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to the Amendment filed 28 June 2004.

The rejections of claims 18-20, 22-28, 33, and 34 have been overcome by applicant's amendment. There are new rejections stated herein for the above claims. The rejections of claims 21 and 29-32 have been overcome. There are no new rejections for claims 21 and 29-32.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 18-20, 23-28, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funaki et al. (U.S. Patent 5,833,792), in view of Bittner, Jr. (U.S. Patent 4,744,936). Regarding Claim 18, Funaki et al., herafter "Funaki," show that it is known to carry out a method for continuously manufacturing films, webs, and sheets of plastics (Abstract), the method comprising guiding a melted plastic mass, preshaped as a sheet, into a roller gap of a calendar, the roller gap formed between a shaping engraving cylinder roller and a smoothing strip surrounding partially circumferentially the shaping engraving cylinder roller, wherein the roller gap extends circumferentially partially about the engraving cylinder roller (Figure 1, elements 13, 18, 26); and providing a profiling by cooling the melted plastic mass in the roller gap downstream of the intake by heat removal on a side of the melted plastic mass facing the

shaping engraving surface (Figure 1, elements 13 and 18; It is noted that exposure of the melted plastic mass to ambient atmosphere will be the mechanism for heat removal.). Funaki does not show heating the engraving roller. Bittner, Jr. shows that it is known to carry out a method for continuously manufacturing films, comprising heating the shaping engraving surface of the cylinder roller to melting temperature at an intake of the roller gap, wherein the melted plastic mass is applied directly onto the shaping engraving surface of the heated cylinder roller (Column 3, lines 52-59). Bittner, Jr. and Funaki are combinable because they are concerned with a similar technical field, namely, processes of continuously manufacturing films. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Bittner, Jr.'s heated engraving roller in Funaki's molding process in order to more easily maintain a desired temperature of the molded film during the shaping process.

Regarding Claim 19, Funaki shows the process as claimed as discussed in the rejection of Claim 18 above, including a method wherein the step of providing a profiling the heat removal is carried out in a controlled fashion along the path of the melted plastic mass about the cylinder roller such that on the side of the solidifying melted plastic mass facing the shaping engraving surface more heat is removed than on the smooth side facing the smoothing strip and the melted plastic mass is hardened in top edges of prisms of the profiling before the material strip exits from an exit gap of the calendar as a finished product (Figure 7; It is noted that more heat will inherently be removed from the side facing the shaping engraving surface than from the smooth side because the smooth side is against an extra layer which will prevent immediate exposure to ambient air and/or cooling spray), meeting applicant's claim.

Regarding Claim 20, Funaki shows the process as claimed as discussed in the rejection of Claims 18 and 19 above, including a method wherein the melted plastic mass solidified to the finished product is moved in a stretched position or in an oppositely bent direction, as a function of the thickness and the mechanical properties of the finished product, to storage or further processing after leaving the exit gap (Figure 1, elements 26 and 15; It is noted that the "further processing" is the step of being wound around the cooling roller 15.), meeting applicant's claim.

Regarding Claim 23, Funaki shows the process as claimed as discussed in the rejection of Claim 18, including a method further comprising the steps of preparing the melted plastic mass, which is pre-shaped as a sheet, in an extruder and transferring the melted plastic mass from the extruder via a wide slot nozzle directly onto the cylinder roller (Figure 1, element 17), meeting applicant's claim.

Regarding Claim 24, Funaki shows the process as claimed as discussed in the rejection of Claim 18 above, including a method further comprising the steps of preparing the melted plastic mass, which is preshaped as a sheet, from a semi-finished plastic product by melting the semi-finished plastic product under a melting cover and subsequently directly transferring the melted plastic mass onto the cylinder roller (Figure 1, element 17), meeting applicant's claim.

Regarding Claim 25, Funaki shows that it is known to have a device for performing a method for continuously manufacturing films, webs, and sheets of plastics capable of forming optical images, wherein a melted plastic mass, preshaped as a sheet, is guided into a roller gap of a calendar, the roller gap formed between a shaping engraving cylinder roller and a smoothing strip surrounding circumferentially partially the shaping engraving cylinder roller wherein the roller gap extends circumferentially partially about the engraving cylinder roller (Figure 1,

elements 18, 13, 26); and wherein the profiling by cooling the melted plastic mass in the roller gap downstream of the intake is provided by heat removal on a side of the melted plastic material facing the shaping engraving surface (Figure 1, elements 13 and 18; It is noted that exposure of the melted plastic mass to ambient atmosphere will be the mechanism for heat removal.), the device comprising a cylinder roller having an exterior engraving sleeve (Figure 1, element 13; The engraving sleeve is being considered as the mass about the cylinder's axis.); a smoothing strip partially circumferentially surrounding the cylinder roller to form the roller gap extending circumferentially partially about the engraving cylinder roller (Figure 1, element 18); and a positionable extruder having a wide slot nozzle, wherein an opening surface of the wide slot nozzle is adjustable longitudinally parallel to the surface of the cylinder roller or to the surface of the engraving sleeve so as to be variable with respect to spacing (Figures 1-7, elements 11 and 17). Funaki does not show heating the engraving roller. Bittner, Jr. shows that it is known to carry out a method for continuously manufacturing films, comprising heating the shaping engraving surface of the cylinder roller to melting temperature at an intake of the roller gap, wherein the melted plastic mass is applied directly onto the shaping engraving surface of the heated cylinder roller (Column 3, lines 52-59). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Bittner's heated engraving roller in Funaki's molding process in order to more easily maintain a desired temperature of the molded film during the shaping process.

Regarding Claim 26, Funaki shows the apparatus as claimed as discussed in the rejection of Claim 25 above, including a device comprising a heating device arranged shortly before an opening of the wide slot nozzle (Figure 1, element 11), meeting applicant's claim.

Regarding Claim 27, Funaki shows the apparatus as claimed as discussed in the rejection of Claim 25 above, including a device comprising an exit roller having a diameter that is at least as large as a diameter of the cylinder roller, wherein an axis of rotation of the exit roller is displaceable for changing a surrounding stretch of the smoothing strip (Figure 1, element 15; Column 5, lines 18-31; It is noted that "displaceable" only requires the element to be *able* to be displaced.), meeting applicant's claim.

Regarding Claim 28, Funaki shows the apparatus as claimed as discussed in the rejection of Claims 25 and 27 above, including a device wherein a spacing of the exit roller from a roller axis of the cylinder roller is changeable (Column 5, lines 18-31), meeting applicant's claim.

Regarding Claim 33, Funaki shows the apparatus as claimed as discussed in the rejection of Claim 25 above, but he does not show using heated rollers. Bittner, Jr. shows that it is known to have a manufacturing device wherein the cylinder roller is comprised substantially only of an engraving sleeve and a heatable support roller arranged in the engraving sleeve for receiving gap pressure of the roller gap and for a linear axis-parallel heating of the engraving sleeve in the area of the roller gap (Column 3, lines 52-59; Column 4, lines 1-9, 43-51). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Bittner, Jr.'s heated roller assembly in Funaki's molding process in order to more easily maintain a desired temperature of the molded film during the shaping process.

Regarding Claim 34, Funaki shows that it is known to have a device for performing a method of continuously manufacturing films, webs, and sheets of plastics capable of forming optical images, wherein a melted plastic mass, preshaped as a shseet, is guided into a roller gap of a calender (Figure 1, element 17), the roller gap formed between a shaping engraving cylinder

roller and a smoothing strip surrounding circumferentially partially the shaping engraving cylinder roller wherein the roller gap extends circumferentially partially about the engraving cylinder rolls (Figure 1, element 18); wherein the melted plastic mass is applied directly onto the shaping engraving surface of the cylinder roller (Figure 1, element 17, 26); and wherein a profiling by cooling the melted plastic mass in the roller gap downstream of the intake is provided by heat removal on a side of the melted plastic material facing the shaping engraving sleeve (Figure 1, elements 13 and 18; It is noted that exposure of the melted plastic mass to ambient atmosphere will be the mechanism for heat removal.); the device comprising a cylinder roller having an exterior engraving sleeve (Figure 1, element 13; The engraving sleeve is being considered as the mass about the cylinder's axis.); a smoothing strip partially circumferentially surrounding the cylinder roller to form the roller gap extending circumferentially partially about the engraving cylinder roller (Figure 1, element 18); and a melting cover arranged upstream of the cylinder roller and configured to melt a premanufactured semifinished plastic product to a melted plastic mass directly supplied to the intake of the roller gap, wherein the melting cover, for producing different temperatures, opens into a heating cover (Figure 1, elements 11 and 17). Funaki does not show heating the engraving roller. Bittner, Jr. shows that it is known to carry out a method for continuously manufacturing films, comprising heating the shaping engraving surface of the cylinder roller to melting temperature at an intake of the roller gap (Column 3, lines 52-59). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Bittner's heated engraving roller in Funaki's molding process in order to more easily maintain a desired temperature of the molded film during the shaping process.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Funaki and Bittner, as applied to claims 18 and 19 above, further in view of Smith et al. (U.S. Patent 4,612,074). Funaki shows the process as claimed as discussed in the rejection of Claims 18 and 19 above, but he does not show a cutting process. Smith et al., hereafter "Smith," show that it is known to carry out a method of continuously manufacturing films, comprising the step of cutting the finished product exiting from the calender to length by a transverse movement of a saw matched to the moving speed of the product (Figure 2, element 142). Smith and Funaki are combinable because they are concerned with a similar technical field, namely, processes of continuously manufacturing films. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Smith's cutting step in Funaki's and Bittner, Jr.'s molding method in order to easily delineate products into certain lengths.

Allowable Subject Matter

Claims 21 and 29-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 18- 34 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with regard to embossing processes in general:

U.S. Patent 5,122,212 to Ferguson et al.

U.S. Patent 6,296,731 to Fujii et al.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A Fontaine whose telephone number is 571-272-1198. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maf
September 3, 2004

MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER